Amendments to the Claims

Please amend the claims as follows:

1. (Currently amended) A method of forming a trench in a semiconductor device, comprising:

forming a polish stop layer on a semiconductor substrate;

forming an anti-reflection coating on the polish stop layer;

selectively etching the anti-reflection coating to form an anti-reflection coating pattern;

etching the polish stop layer and ~~etching~~ the semiconductor substrate to a predetermined depth to form a trench such that ends of the polish stop layer adjacent to the trench are rounded; and

forming an insulation layer that fills the trench.

2. (Currently amended) The method of claim 1, wherein etching the polish stop layer and the semiconductor substrate comprises injecting ~~is performed such that following the injection of~~ one or more of CHF_3, CF_4, O_2, HeO_2, and Ar, creating a plasma ~~is created~~ and dry etching the polish stop layer and the semiconductor substrate ~~is performed~~.

3. (Currently amended) The method of claim 2, wherein ~~the~~ etching the polish stop layer and the semiconductor substrate ~~is performed by~~ comprises injecting ~~one of~~ at most 60sccm of CHF_3, gas, at most 60sccm of CF_4 gas, at most 30sccm of O_2 gas, at most 60sccm of HeO_2, gas, and at most 200sccm of Ar gas.

4. (Currently amended) The method of claim 2, wherein creating a plasma comprises applying 50-500W of power ~~is applied to generate plasma in a state where~~ while injecting one or more of CHF_3, CF_4, O_2, HeO_2, and Ar ~~is injected~~.

5. (Currently amended) The method of claim 2, ~~wherein~~ further comprising creating a pressure environment of 5-100mTorr ~~is created for use~~ during etching the polish stop layer and the semiconductor substrate.

6. (Currently amended) The method of claim 1, ~~further comprising, prior to forming a polish stop layer on a semiconductor substrate:~~

~~forming an anti-reflection coating on the polish stop layer; and~~

~~selectively etching the anti-reflection coating to form an anti-reflection coating pattern,~~

wherein an area of the polish stop layer exposed through the antireflection coating pattern is ~~and the semiconductor substrate to a predetermined depth are~~ etched to form the trench, and ends of the anti-reflection coating pattern ~~and ends of the polish stop layer under the ends of the anti-reflection coating pattern~~ are also etched such that the ends of the anti-reflection coating are ~~formed into a~~ rounded ~~configuration~~.

7. (Not entered)

8. (Currently amended) The method of claim [[7]] 6, wherein ~~the~~ etching the polish stop layer and the semiconductor substrate comprises injecting ~~is performed such that following the injection of~~ one or more of CHF_3, CF_4, O_2, HeO_2, and Ar, creating a plasma ~~is created~~ and dry etching the polish stop layer and the semiconductor substrate ~~is performed~~.

9. (Currently amended) The method of claim 8, wherein ~~the~~ etching the polish stop layer and the semiconductor substrate ~~is performed by~~ comprises injecting ~~one of~~ at most 60sccm of CHF_3 gas, at most 60sccm of CF_4, gas, at most 30sccm of O_2 gas, at most 60sccm of HeO_2 gas, and at most 200sccm of Ar gas.

10. (Currently amended) The method of claim 8, wherein creating a plasma comprises applying 50-500W of power ~~is applied to generate plasma in a state where~~ while injecting one or more of CHF_3, CF_4, O_2, HeO_2, and Ar ~~is injected~~.

11. (Currently amended) The method of claim 8, ~~wherein~~ further comprising creating a pressure environment of 5-100mTorr ~~is created for use~~ during etching the polish stop layer and the semiconductor substrate.

12. (Currently amended) The method of claim 1, wherein the polish stop layer ~~is deposited to~~ has a thickness of 1000-3000Å.

13. (Currently amended) The method of claim 1, wherein the polish stop layer ~~is made of~~ comprises a material that is more slowly polished than an insulation material of the insulation layer.

14. (Currently amended) The method of claim 13, wherein the polish stop layer ~~is formed of~~ comprises a silicon nitride layer ~~deposited to~~ having a thickness of 1000-3000Å.

15. (Currently amended) The method of claim 14wherein etching the polish stop layer and the semiconductor substrate comprises injecting ~~is performed such that following the injection of~~ one or more of CHF_3, CF_4, O_2, HeO_2, and Ar, creating a plasma ~~is created~~ and dry etching the polish stop layer and the semiconductor substrate ~~is performed~~.

16. (Currently amended) The method of claim 15, wherein ~~the~~ etching the polish stop layer and the semiconductor substrate ~~is performed by~~ comprises injecting ~~one of~~ at most 60sccm of CHF_3, gas, at most 60sccm of CF_4 gas, at most 30sccm of O_2 gas, at most 60sccm of HeO_2, gas, and at most 200sccm of Ar gas.

17. (Currently amended) The method of claim 15, wherein creating a plasma comprises applying 50-500W of power ~~is applied to generate plasma in a state where~~ while injecting one or more of CHF_3, CF_4, O_2, HeO_2, and Ar ~~is injected~~.

18. (Currently amended) The method of claim 15, ~~wherein~~ further comprising creating a pressure environment of 5-100mTorr ~~is created for use~~ during etching the polish stop layer and the semiconductor substrate.

19. (Currently amended) The method of claim 1, wherein ~~during~~ forming ~~an~~ the insulation layer ~~that fills the trench, following the formation of~~ comprises forming the insulation layer to cover the polish stop layer and inner walls of the trench, and chemical-mechanical polishing ~~is performed on~~ the insulation layer until the polish stop layer is exposed.

20. (Currently amended) The method of claim 1, wherein prior to forming the insulation layer, the method further comprises forming a liner oxidation layer ~~is formed~~ on the polish stop layer and the trench, ~~then~~ and forming the insulation layer ~~is formed~~ comprises depositing an insulation layer material on the liner oxidation layer such that the trench is filled with ~~a material forming~~ the insulation layer material.